

CLAIMS:

1. A safety toggle bolt for anchoring to an object having a hole therethrough leading to an opening space, comprising:

5 a flexible cable having a proximal end having an anchoring attachment; and

a toggle bar pivotally connected to a distal end of said cable,
wherein said toggle bar is adapted for pivoting between a
closed position for insertion through the hole into the
opening space and an open position in which the toggle bar
10 cannot be withdrawn from the opening space back through
the hole.

2. The safety toggle bolt of claim 1, further comprising a toggle bar return spring for biasing said toggle bar in said open position.

3. A safety toggle bolt for anchoring to an object having a hole therethrough
15 leading to an opening space, comprising:

an elongate handle member defining an elongate axis, said handle

member having a proximal end including an anchoring attachment;

a toggle bar pivotally connected to a distal end of said handle member, wherein said toggle bar is adapted for pivoting between a closed position for insertion through the hole into the opening space and an open position in which the toggle bar cannot be withdrawn from the opening space back through the hole; and

a hole plug movable in the direction of said axis with respect to said handle member, said plug having a plugging portion for centering the plug in the hole and a lip portion for fixing the position of said plug against the object.

4. The safety toggle bolt of claim 3, further comprising a plug biasing spring for biasing said hole plug toward said toggle bar.

5. The safety toggle bolt of claim 4, wherein said plug biasing spring is a compression spring substantially concentrically disposed about said handle member.

6. The safety toggle bolt of claim 3, further comprising a toggle bar return

spring for biasing said toggle bar in said open position.

7. The safety toggle bolt of claim 6, further comprising a plug biasing spring for biasing said hole plug toward said toggle bar.

8. The safety toggle bolt of claim 7, wherein said plug biasing spring is a compression spring substantially concentrically disposed about said handle member.

9. A safety toggle bolt for anchoring to an object having a hole therethrough leading to an opening space, comprising:

an elongate handle member defining an elongate axis, said handle member having a proximal end including an anchoring attachment;

a toggle bar pivotally connected to a distal end of said handle member;

a hole plug movable in the direction of said axis with respect to said handle member, said plug having a plugging portion for centering the plug in the hole and a lip portion for fixing the position of said plug against the object; and

an elongate toggle bar pivot control member movable in the
direction of said axis with respect to said handle member,
said pivot control member having a handle end accessible
outside the hole and a control end attached to said toggle
bar, for pivoting said toggle bar between a closed position
for insertion through the hole into the opening space and an
open position in which the toggle bar cannot be withdrawn
from the opening space back through the hole.

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10 10. The safety toggle bolt of claim 9, wherein said pivot control member is
movable in the direction of said axis with respect to said hole plug.

11. The safety toggle bolt of claim 10, wherein said handle member comprises
a flexible cable.

12. The safety toggle bolt of claim 10, further comprising a plug biasing
spring for biasing said hole plug toward said toggle bar.

15 13. The safety toggle bolt of claim 10, further comprising a toggle bar return
spring for biasing said toggle bar in said open position.

14. The safety toggle bolt of claim 13, further comprising a plug biasing

spring for biasing said hole plug toward said toggle bar.

15. The safety toggle bolt of claim 14, wherein said handle member comprises a flexible cable.

16. The safety toggle bolt of claim 15 wherein said plug biasing spring is
5 substantially concentrically arranged around said flexible cable.

17. The safety toggle bolt of claim 16 wherein said toggle bar, in said closed position, is adapted to fit into a recess in said plug, for holding said toggle bar in said closed position.

18. A method for anchoring to an object having a hole therethrough leading to
10 an opening space, comprising:

providing a safety toggle bolt having a handle member and a toggle

bar pivotally connected to the handle member;

locking the toggle bar in a closed position;

inserting the safety toggle bolt through the hole; and

pushing on the handle member so as to unlock the toggle bar from
the closed position, wherein the toggle bar automatically
opens to an open position.

19. A method for anchoring to an object having a hole therethrough leading to
5 an opening space, comprising:

providing a safety toggle bolt having a handle member, a toggle bar
pivotally connected to the handle member, and a hole plug;

locking the toggle bar in a closed position;

10 inserting the safety toggle bolt through the hole so as to seat the
hole plug in the hole;

pushing on the handle member so as to unlock the toggle bar from
the closed position; and

15 releasing the handle member subsequent to said step of pushing,
wherein the toggle bar is automatically pulled toward the
hole plug, to automatically adjust the safety toggle bolt to
the depth of the hole.

20. The method of claim 19, wherein said step of locking the toggle bar into a closed position includes engaging an end of said toggle bar in a recess in the hole plug.